

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail, in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date shown below.

Dated: August 10, 2005

Signature:

(Nabeela R. McMillian)

Docket No.: 23004/40746  
(PATENT)

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re Patent Application of:  
Daniel Tillett et al.

Application No.: 10/517,698

Confirmation No.: 8618

Filed: December 13, 2004

Art Unit: Not Yet Assigned

For: DNA Amplification and Sequencing in  
Collapsible Emulsions

Examiner: Not Yet Assigned

**STATEMENT PURSUANT TO 37 CFR 1.821(f)**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Dear Sir:

I hereby state that the content of the paper and computer-readable copies of the Sequence Listing, submitted herewith in accordance with 37 C.F.R. § 1.821, are the same.

Dated: August 10, 2005

Respectfully submitted,

By \_\_\_\_\_  
Nabeela R. McMillian

Registration No.: 43,363  
MARSHALL, GERSTEIN & BORUN LLP  
233 S. Wacker Drive, Suite 6300  
Sears Tower  
Chicago, Illinois 60606-6357  
(312) 474-6300  
Attorney for Applicant

SEQUENCE LISTING

<110> Tillet et al.

<120> DNA AMPLIFICATION AND SEQUENCING IN COLLAPSIBLE EMULSIONS

<130> 23004/40746

<140> US 10/517,698

<141> 2004-12-13

<150> PCT/AU03/00746

<151> 2003-06-13

<150> AU PS 2981

<151> 2002-06-13

<160> 11

<170> PatentIn version 3.0

<210> 1

<211> 4245

<212> DNA

<213> Artificial sequence

<220>

<223> Plasmid pCR-Blunt II-TOPO

<400> 1	60
agcgcccaat acgcaaaccg cctctcccg cgcggtggcc gattcattaa tgcagctggc	
acgacagggtt tcccgaactgg aaagcgggca gtgagcgcaa cgcaattaat gtgagtttagc	120
tcaactcatta ggcaccccaag gctttacact ttatgcttcc ggctcgtatg ttgtgtggaa	180
tttgtgagcgg ataacaattt cacacaggaa acagctatga ccatgattac gccaagctat	240
ttaggtgaca ctatagaata ctcaagctat gcatcaagct tggtaccgag ctccggatcca	300
ctagtaacgg ccgccagtgt gctggaattc gccctcatat gagtaaagga gaagaacttt	360
tcaactggagt tgtcccaatt cttgttgaat tagatggcga tgttaatggg caaaaattct	420
ctgtcagtgg agagggtgaa ggtgatgcaa catacggaaa acttaccctt aaattttattt	480
gcactactgg gaagctacct gttccatggc caacacttgt cactactttc gcgtatggtc	540
ttaaatgctt tgcgagatac ccagatcata taaaacagca tgacttttc aagagtgc当地	600
tgcggaaagg ttatgtacag gaaagaacta tattttacaa agatgacggg aactacaaga	660
cacgtgctga agtcaagttt gaagggtgata cccttggtaa tagaatcgag taaaaggtt	720
ttgattttaa agaagatgga aacattcttg gacacaaaat ggaatacaac tataactcac	780
ataatgtata catcatggca gacaaaccaa agaatggaat caaagttaac ttcaaaaatta	840
gacacaacat taaagatgga agcggtcaat tagcagacca ttatcaacaa aataactccaa	900
ttggcgatgg ccctgtcctt ttaccagaca accattacct gtccacacaa tctgcccttt	960
ccaaagatcc caacgaaaag agagatcaca tgatcctct tgagttgtt acagctgctg	1020

ggattacaca	tggcatggat	gaactataca	aataaggatc	ctaagggcga	attctgcaga	1080
tatccatcac	actggcgccc	gctcgagcat	gcatctagag	ggcccaattc	gccctatagt	1140
gagtcgtatt	acaattcact	ggccgtcggt	ttacaacgtc	gtgactggga	aaaccctggc	1200
gttacccaac	ttaatcgccct	tgcagcacat	cccccttcg	ccagctggcg	taatagcgaa	1260
gaggccccca	ccgatcgccc	ttcccaacag	ttgcgcagcc	tatacgtacg	gcagtttaag	1320
gtttacacct	ataaaagaga	gagccgttat	cgtctgtttg	tggatgtaca	gagtgtat	1380
attgacacgc	cggggcgacg	gatggtgatc	cccctggcca	gtgcacgtct	gctgtcagat	1440
aaagtctccc	gtgaacttta	cccggtggtg	catacgggg	atgaaagctg	gcgcatgatg	1500
accaccgata	tggccagtgt	gccggtctcc	gttatcgggg	aagaagtggc	tgatctcagc	1560
caccgcgaaa	atgacatcaa	aaacgccatt	aacctgtatgt	tctggggaat	ataaaatgtca	1620
ggcatgagat	tatcaaaaag	gatttcacc	tagatcctt	tcacgtagaa	agccagtccg	1680
cagaaacggt	gctgaccccg	gatgaatgtc	agctactggg	ctatctggac	aaggggaaaac	1740
gcaagcgcaa	agagaaagca	ggtagcttc	agtgggctta	catggcgata	gctagactgg	1800
gcggtttat	ggacagcaag	cgaaccggaa	ttgccagctg	ggcgccctc	tggttaagg	1860
gggaagccct	gcaaagtaaa	ctggatggct	ttctcgccgc	caaggatctg	atggcgcagg	1920
ggatcaagct	ctgatcaaga	gacaggatga	ggatcgttc	gcatgattga	acaagatgga	1980
ttgcacgcag	gttctccggc	cgcttgggtg	gagaggctat	tcggctatga	ctgggcacaa	2040
cagacaatcg	gctgctctga	tgccgcccgt	ttccggctgt	cagcgcaggg	gcgcccgg	2100
cttttgtca	agaccgac	gtccggtgcc	ctgaatgaac	tgcaagacga	ggcagcgcgg	2160
ctatcgtggc	tggccacgac	ggcggttcct	tgcgagctg	tgctcgacgt	tgtca	2220
gcgggaaggg	actggctgct	attggcgaa	gtgccgggc	aggatctct	gtcatctcac	2280
cttgctcctg	ccgagaaagt	atccatcatg	gctgatgcaa	tgccggcgct	gcatacgctt	2340
gatccggcta	cctgcccatt	cgaccaccaa	gcgaaacatc	gcatcgagcg	agcacgtact	2400
cggatggaag	ccggcttctgt	cgatcaggat	gatctggacg	aagagcatca	ggggctcg	2460
ccagccgaac	tgttcggccag	gctcaaggcg	agcatgccc	acggcgagga	tctcgctg	2520
acccatggcg	atgcctgctt	gccgaatatc	atggtgaaa	atggccgctt	ttctggattc	2580
atcgactgtg	gccggctggg	tgtggcgac	cgctatcagg	acatagcg	tttacccgt	2640
gatattgctg	aagagcttgg	cgcgaaatgg	gctgaccgct	tcctcgct	ttacggatc	2700
gccgctccc	attcgcagcg	catcgccctc	tatcgccctc	ttgacgagtt	cttctgaatt	2760
attaacgctt	acaatttcct	gatgcggat	tttctccctt	cgcatctgt	cggtatttca	2820
caccgcatac	aggtggact	tttcggggaa	atgtgcgcgg	aaccctatt	tgttatttt	2880
tctaaataca	ttcaaataatg	tatccgctca	tgagacaata	accctgataa	atgcttcaat	2940

aatagcacgt	gaggagggcc	accatggcca	agttgaccag	tgccgttccg	gtgctcaccg	3000	
cgcgcgacgt	cgcgcgacgt	cgccggagcg	gtcgagtct	ggaccgaccg	gctcgggttc	tcccgaaact	3060
tctgtggagga	cgacttcgcc	ggtgtggtcc	gggacgacgt	gaccctgttc	atcagcgcgg	3120	
tccaggacca	ggtgtggccg	gacaacaccc	tggcctgggt	gtgggtgcgc	ggcctggacg	3180	
agctgtacgc	cgagtggtcg	gaggtcgtgt	ccacgaactt	ccgggacgcc	tccgggcccgg	3240	
ccatgaccga	gatcggcgag	cagccgtggg	ggcgggagtt	cgccctgcgc	gaccggccgg	3300	
gcaactgcgt	gcacttcgtg	gccgaggagc	aggactgaca	cgtgctaaaa	cttcattttt	3360	
aatttaaaag	gatcttaggtg	aagatcctt	ttgataatct	catgaccaaa	atcccttaac	3420	
gtgagtttc	gttccactga	gcgtcagacc	ccgtagaaaa	gatcaaagga	tcttcttgag	3480	
atccctttt	tctgcgcgta	atctgctgt	tgcaaacaaa	aaaaccaccc	ctaccagcgg	3540	
tgggggttt	gccggatcaa	gagctaccaa	ctcttttcc	gaaggtaact	ggcttcagca	3600	
gagcgcagat	accaaatact	gtccttctag	tgtagccgt	gttaggcccac	cacttcaaga	3660	
actctgtacgt	accgcctaca	tacctcgctc	tgctaattct	gttaccagt	gctgctgcc	3720	
gtggcgataa	gtcggtctt	accgggttgg	actcaagacg	atagttaccg	gataaggcgc	3780	
agcggtcggg	ctgaacgggg	gttcgtgca	cacagcccc	cttggagcga	acgacctaca	3840	
ccgaactgag	atacctacag	cgtgagctat	gagaaagcgc	cacgcttccc	gaagggagaa	3900	
aggcggacag	gtatccggt	agcggcaggg	tcggaacagg	agagcgcacg	agggagctt	3960	
cagggggaaa	cgcctggtat	ctttatagtc	ctgtcgggtt	tcgcccaccc	tgacttgagc	4020	
gtcgattttt	gtgatgtcg	tcaggggggc	ggagcctatg	aaaaaacgcc	agcaacgcgg	4080	
cctttttacg	gttcctgggc	ttttgctggc	ctttgctca	catgttctt	cctgcgttat	4140	
cccctgattc	tgtggataac	cgtattaccc	ccttgagtg	agctgataacc	gtcgccgca	4200	
gccgaacgac	cgagcgcagc	gagtcaigt	gacgaggaagc	ggaag		4245	

<210> 2  
 <211> 3197  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Plasmid pGEM-3zf (+)

<400> 2	gggcgaattc	gagctcggt	cccggggatc	ctctagagtc	gacctgcagg	catgcaagct	60
	ttagtattct	atagtgtcac	ctaaatagct	tggcgtatc	atggtcata	ctgtttcctg	120
	tgtgaaattg	ttatccgctc	acaattccac	acaacatacg	agccggaagc	ataaaagtgt	180
	aaggcctgggg	tgcctaatga	gtgagctaac	tcacattaat	tgcgttgcgc	tcactgccc	240
	ctttccagtc	gggaaacctg	tgcgtgccagc	tgcattaaatg	aatcggccaa	cgcgcccc	300

gaggcggttt	gcgtattggg	cgtcttcgg	cttcctcgct	cactgactcg	ctgcgctcg	360
tcgttcggct	gcggcgagcg	gtatcagctc	actcaaaggc	ggtaatacgg	ttatccacag	420
aatcagggga	taacgcagga	aagaacatgt	gagcaaaagg	ccagcaaaag	gccaggaacc	480
gtaaaaaggc	cgcgttgctg	gcgttttcc	ataggctcg	ccccctgac	gagcatcaca	540
aaaatcgacg	ctcaagtcag	aggtggcgaa	acccgacagg	actataaaga	taccaggcgt	600
ttccccctgg	aagctccctc	gtgcgctctc	ctgttccgac	cctgccgtt	accggatacc	660
tgtccgcctt	tctcccttcg	ggaagcgtgg	cgctttctca	tagtcacgc	tgttaggtatc	720
tcagttcggt	gtaggtcggt	cgctccaagc	tgggctgtgt	gcacgaaccc	cccggtcagc	780
ccgaccgctg	cgccttatcc	gttaactatc	gtcttgagtc	caacccggta	agacacgact	840
tatcgccact	ggcagcagcc	actggtaaca	ggatttagcag	agcgaggat	gtaggcggtg	900
ctacagagtt	cttgaagtgg	tggcttaact	acggctacac	tagaagaaca	gtatggta	960
tctgcgctct	gctgaagcca	gttaccttcg	gaaaaagagt	tggtagctct	tgatccggca	1020
aacaaaccac	cgctggtagc	ggtgggtttt	ttgtttgcaa	gcagcagatt	acgcgcagaa	1080
aaaaaggatc	tcaagaagat	ccttgatctttt	tttctacggg	gtctgacgct	cagtggAACG	1140
aaaactcacg	ttaagggatt	ttggcatgat	gattatcaa	aaggatctc	acctagatcc	1200
ttttaaatta	aaaatgaagt	tttaaatcaa	tctaaagtat	atatgagtaa	acttggtctg	1260
acagttacca	atgcttaatc	agtgaggcac	ctatctcagc	gatctgtcta	tttcgttcat	1320
ccatagttgc	ctgactcccc	gtcgtgtaga	taactacgt	acgggagggc	ttaccatctg	1380
gccccagtgc	tgcaatgata	ccgcgagacc	cacgctcacc	ggctccagat	ttatcagcaa	1440
taaaccagcc	agccggaagg	gccgagcgca	gaagtggtcc	tgcaacttta	tccgcctcca	1500
tccagtctat	taatttgtgc	cgggaagcta	gagtaagtag	ttcgccagtt	aatagttgc	1560
gcaacgttgc	tgccattgct	acaggcatcg	tggtgtcacg	ctcgctgttt	ggtatggctt	1620
cattcagctc	cggttccaa	cgtcaaggc	gagttacatg	atccccatg	tttgcaaaa	1680
aagcggtag	ctccttcgg	cctccgatcg	ttgtcagaag	taagttggcc	gcagtgttat	1740
cactcatgg	tatggcagca	ctgcataatt	ctcttactgt	catgccatcc	gtaagatgct	1800
tttctgtgac	ttgtgagtac	tcaaccaagt	cattctgaga	atagtgtatg	cggcgaccga	1860
gttgctcttgc	ccggcgtca	atacgggata	ataccgcgc	acatagoaga	acttaaaag	1920
tgctcatcat	tggaaaacgt	tctcggggc	gaaaactctc	aaggatctta	ccgctgttg	1980
gatccagttc	gatgtaaccc	actcgtgcac	ccaaactgatc	ttcagcatct	tttactttca	2040
ccagcgtttc	tgggtgagca	aaaacagggaa	ggcaaaatgc	cgcaaaaaag	ggaataaggg	2100
cgacacggaa	atgttgaata	ctcatactct	tccttttca	atattattga	agcatttac	2160
agggttatttgc	tctcatgagc	ggatacatat	ttgaatgtat	ttagaaaaat	aaacaaatag	2220

gggttccgcg cacattccc cgaaaagtgc cacctgacgt ctaagaaacc attattatca	2280
tgacattaac ctataaaaat aggcgatcatc cgaggccctt tcgtctcgcg cgtttcggtg	2340
atgacggtga aaacctctga cacatgcagc tcccgagac ggtcacagct tgtctgtaa	2400
cgatgccgg gagcagacaa gcccgtcagg gcgcgtcagc ggggttggc ggggtcggg	2460
gctggcttaa ctatgcggca tcagagcaga ttgtactgag agtgcaccat atgcggtgtg	2520
aaataccgca cagatgcgta aggagaaaat accgcattcag gaaattgtaa gcgttaat	2580
tttggtaaaa ttgcgttaa attttggta aatcagctca ttttttaacc aataggccga	2640
aatcggcaaa atccctata aatcaaaaaga atagaccgag atagggttga gtgttggc	2700
agtttggAAC aagagtccac tattaaagaa cgtggactcc aacgtcaaag ggcggaaaaac	2760
cgtctatcag ggcatggcc cactacgtga accatcaccc taatcaagtt ttttgggtc	2820
gaggtgccgt aaagcactaa atcgaaaccc taaaggagc ccccgattta gagttgacg	2880
ggggaaagccg gcgaaacgtgg cgagaaagga agggagaaa gcgaaaggag cggcgctag	2940
ggcgctggca agttagcgg tcacgtcg cgtaaccacc acacccggc cgcttaatgc	3000
ggcgctacag ggccgtcca ttgcattc aggctgcga actgttggg aggccgatcg	3060
gtgcgggcct ttgcgtatt acgcagctg gcaaaagggg gatgtgctgc aaggcgatta	3120
agttgggtaa cgccagggtt ttcccagtca cgacgttga aaacgacggc cagtgaattt	3180
taatacgact cactata	3197

<210> 3  
 <211> 7249  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Bacteriophage M13mp18

<400> 3 aatgctacta ctattagtag aattgatgcc acctttcag ctcgcgcggg aaatgaaaat	60
atagctaaac aggttattga ccatttgcga aatgtatcta atggtcaaac taaatctact	120
cgttcgcaga attggaaatc aactgttaca tggaatgaaa cttccagaca ccgtacttta	180
gttgcattttaaaaatgt tgagctacag caccagattc agcaattaag ctctaagcca	240
tccgcaaaaaaaaa tgaccttta tcaaaaggag caattaaagg tactctotaa tcctgacctg	300
ttggagtttgcgtt ggttcgtttt gaagctcgaa taaaacgcg atatttgaag	360
tctttcgggc ttccctttaa tcttttgcgtt gcaatccgct ttgcgttgcgttcttgcgtt	420
cagggtaaag acctgatttt tgatttatgg tcatttcgtt tttctgaact gtttaaagca	480
tttgaggggg attcaatgaa tatttatgac gattccgcag tattggacgc tatccagtct	540
aaacatttta ctattacccc ctctggcaaa acttcttttgcgttcttgcgttcttgcgtt	600

ggttttatc gtcgtctgg	aaacgagggt tatgatagt	tgctcttac tatgcctcg	660
aattcccttt ggcttatgt atctgcatta	gttgaatgtg gtattcctaa	atctcaactg	720
atgaatctt ctacctgtaa taatgtt	gtttagttc gtttattaa	cgtagattt	780
tcttccaac gtcctgactg	gtataatgag ccagttctt	aaatgcata aggttaattc	840
aatgattaa agttgaaatt aaaccatctc	aagccaaatt tactactcg	tctggtgttc	900
tcgtcaggc aagcattt	cactgaatga gcagcttgc	tacgttgatt tggtaatga	960
atatccggtt cttgtcaaga ttactcttga	tgaaggtcag ccagcctatg	cgccctggct	1020
gtacaccgtt catctgtcct	cttcaaagt tggtcagttc	ggttccctta tgattgaccg	1080
tctgcgcctc gttccggcta	agtaacatgg agcaggcgc	ggatttcgac acaatttata	1140
aggcgatgat acaaattctcc	gttgtacttt gttcgcgt	tggtataatc gctgggggtc	1200
aaagatgagt gtttagtgt attcttcgc	ctcttcgtt ttaggttgt	gccttcgtag	1260
tggcattacg tattttaccc	gtttaatgga aacttcctca	tgaaaaagtc tttagtcctc	1320
aaaggctctg tagccgttgc	taccctcggtt ccgatgctgt	cttcgcgtc tgagggtgac	1380
gatcccgcaa aagcggcctt	taactccctg caagcctcag	cgaccgaata taticggttat	1440
gcgtgggcga tggtttgtt	cattgtcggc gcaactatcg	gtatcaagct gtttaagaaa	1500
ttcacctcga aagcaagctg	ataaaccgat acaattaaag	gctcctttg gagcctttt	1560
ttttggagat ttcaacgtg	aaaaaattat tattcgcaat	tccttagtt gttcctttct	1620
attctcactc cgctgaaact	gttgaaggtt gtttagcaaa	accccataca gaaaattcat	1680
ttactaacgt ctggaaagac	gacaaaactt tagatcgta	cgctaactat gaggggtgtc	1740
tgtggaatgc tacaggcgtt	gtagttgtt	ctggtgacga aactcagtgt tacggatcat	1800
ggttcctat tgggcttgct	atccctgaaa atgagggtgg	tggctctgag ggtggcggtt	1860
ctgagggtgg	cggctctgag ggtggcggt	ctaaacctcc tgagtacggt gatacaccta	1920
ttccgggcta tacttatatc	aaccctctcg acggcactta	tccgcctgg actgagcaaa	1980
accccgctaa tcctaattcct	tctcttgagg agtctcagcc	tcttaataact ttcatgtttc	2040
agaataatag gttccgaaat	aggcaggggg cattaaactgt	ttatacgggc actgttactc	2100
aaggcactga cccccttaaa	acttattacc agtacactcc	tgtatcatca aaagccatgt	2160
atgacgctta ctggAACGGT	aaattcagag actgcgtttt	ccattctggc tttaatgaag	2220
atccattcgt ttgtgaatat	caaggccaat cgtctgaccc	gcctcaaccc cctgtcaatg	2280
ctggcggcgg	ctctgggtt	ggttctggc gggctctga gggtggtggc tctgagggtg	2340
gcggttctga	gggtggcggc tctgaggag	gcggttccgg tggtggtct ggtccgggtg	2400
attttgatta tgaaaagatg	gcaaacgcta ataagggggc	tatgaccgaa aatgccatgt	2460
aaaacgcgcgt	acagtctgac gctaaaggca	aacttgattc tgtcgtact gattacgggtg	2520

ctgctatcga tggttcatt ggtgacgtt ccggccttgç taatggtaat ggtgctactg	2580
gtgatttgc tggctcta at tcccaa atgg ctcaagtcgg tgacggtgat aattcacctt	2640
taatgaataa ttccgtcaa tatttaccc ttccctca atcggtt gaa tgtcgccc tt	2700
ttgtcttag cgctggtaaa ccatatgaat tttctattga ttgtgacaaa ataaaacttat	2760
tccgtggtgt ctggcggtt ctttatatg ttgccaccc tatgtatgta ttttctacgt	2820
ttgcta acat actgcgtaat aaggagtctt aatcatgcca gttctttgg gtattccgtt	2880
attattgcgt ttccctcggtt tccttctggt aactttgttc ggctatctgc ttactttct	2940
taaaaagggc ttccgttaaga tagctattgc tatttcattt gttcttgctc ttattattgg	3000
gcttaactca attcttgcgtt gttatctctc tgatattagc gctcaattac cctctgactt	3060
tgttcagggt gttcagttaa ttctccgctc taatgcgtt ccctgtttt atgttattct	3120
ctctgtaaag gctgcatttt tcattttga cgttaaaca aaaaatcgttt cttattttgga	3180
ttgggataaa taatatggct gtttattttg taactggcaa attaggctct ggaaagacgc	3240
tcgttagcgt tggtaagatt caggataaaa ttgttagctgg gtgaaaata gcaactaata	3300
ttgatttaag gttcaaaaac ctcccgcaag tcgggagggtt cgctaaaacg cctcgcgttc	3360
ttagaatacc ggataagcct tctatatctg atttgcttgc tattggcgc ggtaatgatt	3420
cctacgatga aaataaaaac ggcttgcttg ttctcgatga gtgcggtaact tggtttaata	3480
cccgttcttgc gatgataag gaaagacagc cgattattga ttggtttcta catgctcgta	3540
aattaggatg ggtatatttt ttcttgcgtt aggacttac tattgtt gat aaacaggcgc	3600
gttctgcatt agctgaacat gttgttttatt gtcgtcgct ggacagaatt actttaccc	3660
ttgtcggtac ttatattctt cttattactg gctcgaaaat gcctctgcct aaattacatg	3720
ttggcgttgc taaatatggc gattctcaat taagccctac tggtagcgt tggctttata	3780
ctggtaagaa ttgtataac gcatatgata ctaaacaggc ttttcttagt aattatgatt	3840
ccgggtttta ttcttattta acgccttatt tacacacgg tcggatttc aaaccattaa	3900
attaggtca gaagatgaaa ttaactaaaa tatattgaa aaagtttctt cgctttctt	3960
gtcttgcgtt gggatttgc tcagcattta catatagtt tataacccaa cctaagccgg	4020
aggttaaaaa ggtgtctct cagacctatg atttgataa attcactatt gactcttc	4080
agcgtcttaa tctaagctat cgctatgtt tcaaggattc taaggaaaa ttaattaata	4140
gcgacgattt acagaagcaa ggttattcac tcacatata tggatgtt actgtttcca	4200
ttaaaaaagg taattcaaat gaaattgtt aatgtat ttttgcattt cttgtatgtt	4260
gtttcatcat cttctttgc tcaggtaatt gaaatgata attcgccctt gcgatgtt	4320
gtaacttggtt attcaaagca atcaggcgaa tccgttattt gttctccgaa tgtaaaaaggt	4380
actgttactg tatattcatc tgacgttaaa cctgaaaatc tacgcaattt cttatttct	4440

gtttacgtg ctaataattt tgatatggc ggttcaattc cttccataat tcagaagtt	4500
aatccaaaca atcaggatta tattgatgaa ttgcgcattcat ctgataatca ggaatatgat	4560
gataattccg ctccttctgg tggttcttt gttccgcaaa atgataatgt tactcaaact	4620
ttaaaatttataaacgttcg ggcaaaaggat ttaatacgag ttgtcgaatt gttgtaaag	4680
tctaatactt ctaaatcctc aaatgttata tctattgacg gctctaattt attagttgtt	4740
agtgcaccta aagatattt agataaccctt cctcaattcc tttctactgt tgatttgcca	4800
actgaccaga tattgattga gggtttgcata tttgagggttc agcaagggtga tgcttttagat	4860
tttcattttc ctgcggcgc tcagcgtggc actgttgcag gcgggtttaa tactgaccgc	4920
ctcacctctg ttttatcttc tgctgggtgt tcggtcgta ttttaatgg cgatgttttta	4980
gggctatcag ttgcgcattt aaagactaat agccattcaa aaatattgtc tggccacgt	5040
attcttacgc ttcaagggtca gaagggttct atctctgttgc cccttttatt	5100
actggcgttg tgactgggtga atctgcattt gtaaataatc catttcagac gattgagcgt	5160
caaaatgttag gtatttccat gagcgtttt cctgttgcaaa tggctggcgg taatattgtt	5220
ctggatatta ccagcaaggc cgatagttt agttcttcta ctcaggcaag tgatgttatt	5280
actaatcaaa gaagtattgc tacaacgggtt aatttgcgtg atggacagac tctttactc	5340
ggtggcctca ctgattataa aaacacttct caagattctg gcgtaccgtt cctgtctaaa	5400
atccctttaa tcggcctcct gtttagctcc cgctctgatt ccaacgagga aagcacgtt	5460
tacgtgctcg tcaaagcaac catagtagcgc gccctgttagc ggccgtttaa gcgcggcggg	5520
tgtggtggtt acgcgcagcg tgaccgctac acttgccagc gccctagcgc ccgctccccc	5580
cgctttcttc cttcccttcc tcgcccacgtt cgccggctt ccccgtaag ctctaaatcg	5640
ggggctccct ttagggttcc gatttatgtc tttacggcac ctcgaccctt aaaaacttga	5700
tttgggtgat ggttcacgtt gtggggccatc gccctgatag acggtttttc gccctttgac	5760
gttggagtcc acgttctta atagtggact cttgttccaa actggaaacaa cactcaaccc	5820
tatctcgggc tattcttttgc atttataagg gattttggccg atttcggAAC caccatcaa	5880
caggattttc gcctgctggg gcaaaccaggc gtggaccgt tgctgcaact ctctcagggg	5940
caggcggtga agggcaatca gctgttgcgc gtctcgctgg tgaaaagaaaa aaccaccctg	6000
gcgcggcaata cgcaaaaccgc ctctccccgc gcgttggccg attcattaaat gcagctggca	6060
cgacagggtt cccgacttggaa aagcgggcag tgagcgcaac gcaattaaatg tgatgttagct	6120
cactcatttttgc ctttacactt tatgttccgc gctcgatgt tttgtggaaat	6180
tgtgagcgga taacaatttc acacaggaaa cagctatgac catgattacg aatttcgagct	6240
cggtaaccgg ggatcctcta gagtcgacccgt gcaggcatgc aagcttggca ctggccgtcg	6300
ttttacaacg tcgtgactgg gaaaaccctg gcgttaccca acttaatcgc cttgcagcac	6360

atccccctt	cggcagctgg	cgtaatagcg	aaggaggcccg	caccgatcgc	ccttcccaac	6420
agttgcgcag	cctgaatggc	aatggcgct	ttgcctggtt	tccggcacca	gaagcggtgc	6480
cggaaagctg	gctggagtgc	gatcttcctg	aggccgatac	ggtcgtcgta	ccctcaaact	6540
ggcagatgca	cggttacgt	gcgcgcacatct	acaccaacgt	aacctatccc	attacggtca	6600
atccgccgtt	tgttcccacg	gagaatccga	cgggttgtta	ctcgctcaca	ttaatgttg	6660
atgaaagctg	gctacaggaa	ggccagacgc	gaattatttt	tgtatggcggtt	cctattggtt	6720
aaaaaatgag	ctgatTTAAC	aaaatTTAA	cgcgaatttt	aacaaaatat	taacgtttac	6780
aatttaataa	tttgcttata	caatcttcct	gttttgggg	cttttctgtat	tatcaaccgg	6840
ggtagatatg	attgacatgc	tagtttacg	attaccgttc	atcgattctc	ttgtttgctc	6900
cagactctca	ggcaatgacc	tgatagcctt	tgttagatctc	tcaaaaatag	ctaccctctc	6960
cggcattaat	ttatcagcta	gaacgggtga	atatcatatt	gatggtgatt	tgactgtctc	7020
cggcctttct	cacccttttg	aatcttacc	tacacattac	tcaggcattg	cattaaaat	7080
atatgagggt	tctaaaaatt	tttaccttg	cgttgaaata	aaggcttctc	ccgcaaaagt	7140
attacagggt	cataatgttt	ttggtaacaac	cgatTTAGT	ttatgctctg	aggctttatt	7200
gcttaatttt	gctaattctt	tgccctgcct	gtatgattta	ttggatgtt		7249

<210> 4  
 <211> 1016  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> PCR product

<400>	4	agcggataac	aatttcacac	aggaaacagc	tatgaccatg	attacgcca	gctatTTAGG	60
		tgacactata	gaataactcaa	gctatgcac	aagcttggta	ccgagctcg	atccactagt	120
		aacggccg	cc	agtgtgtgg	aattcgcc	cata	tgatgatgt	180
		ggagttgtcc	caattctt	gtt	gatgtt	atgggcaaa	attctctgtc	240
		agtggagagg	gtgaagg	tgca	acatac	ggaaaactt	ccctt	300
		actgggaagc	tac	cttgc	acta	tttgcgt	ttca	360
		tgcttgcga	gata	cc	atgt	tttca	agag	420
		gaaggttat	tgac	aggaa	aactat	tacaa	aggat	480
		gctgaagtca	agttt	gaa	tttgc	tttgc	tttgc	540
		tttaaagaag	atggaa	acat	tttgc	tttgc	tttgc	600
		gtatacatca	tgg	cagaca	acc	aaaga	at	660
		aacattaaag	atg	gaagcgt	tca	atttag	ac	720

gatggccctg tcctttacc agacaaccat tacctgtcca cacaatctgc ccttccaaa	780
gatcccaacg aaaagagaga tcacatgatc cttcttgagt ttgtaacagc tgctgggatt	840
acacatggca tggatgaact atacaataa ggatcctaag ggcgaattct gcagatatcc	900
atcacactgg cgccgcctcg agcatgcac tagagggccc aattcgccct atagttagtc	960
gtattacaat tcactggccg tcgtttaca acgtcgtgac tggaaaaacc ctggcg	1016

<210> 5  
 <211> 2686  
 <212> DNA  
 <213> Artificial sequence

<220>  
 <223> Plasmid pUC18

<400> 5	
tcgcgcgtt cggtgatgac ggtaaaaacc tctgacacat gcagctcccg gagacggta	60
cagcttgtct gtaaggcgat gcccggagca gacaagcccg tcagggcgcg tcagcgggtg	120
ttggcgggtg tcggggctgg cttaaactatg cggcatcaga gcagattgta ctgagagtgc	180
accatatgct gtgtgaaata ccgcacagat gcgtaaggag aaaataccgc atcaggcgcc	240
atccgcatt caggctgcgc aactgttggg aaggcgatc ggtgcgggcc tcttcgttat	300
tacgccagct ggcgaaaggg ggatgtgctg caaggcgatt aagttggta acgccagggt	360
tttcccagtc acgacgttgt aaaacgacgg ccagtgc当地 gcttcgttatc ctgcagggtcg	420
actctagagg atccccgggt accgagctcg aattcgtaat catggc当地 gctgtttcct	480
gtgtgaaatt gttatccgt cacaattcca cacaacatac gagccggaaag cataaaagtgt	540
aaaggctggg gtcctaatg agttagctaa ctcacattaa ttgcgttgc当地 ctcaactgccc	600
gctttccagt cggaaacct gtcgtgc当地 ctgc当地 attaa gaatcgccca acgc当地 ggggg	660
agaggcggtt tgc当地 attgg ggc当地 cttcc gcttc当地 cgc tcactgactc gctgc当地 ctg	720
gtc当地 ttccggc tgc当地 ggagc ggtatc当地 cactcaaagg cggtaatacg gttatccaca	780
gaatcagggg ataacgcagg aaagaacatg tgagcaaaag gccagcaaaa ggccaggaac	840
cgtaaaaagg ccgc当地 ttgtc ggc当地 ttttc cataggctcc gccccctga cgagcatcac	900
aaaaatcgac gctcaagtca gaggtggcga aaccgc当地 ag gactataaag ataccaggcg	960
tttccccctg gaagctccct cgtgc当地 ctct cctgttccga ccctgccc当地 taccggatac	1020
ctgtccgc当地 ttctcccttc gggagcgtg ggc当地 tttctc aatgctc当地 ag ctgttaggtat	1080
ctcagttc当地 ggtaggtc当地 tgc当地 ccaag ctggctgtg tgc当地 cacgaacc cccc当地 ttccag	1140
cccgaccgct ggc当地 cttatc cggtaactat cgtctt当地 gaggtccaaag aagacacgc当地	1200
ttatcgccac tggc当地 agcaggc当地 cactggtaac aggattagca gagc当地 gaggttgc当地	1260
gctacagagt tctt当地 gaagtgc当地 gtggc当地 taac tacggctaca ctagaaggac agtattt当地 gggt	1320

atctgcgctc	tgctgaagcc	agttaccc	tttggat	tttatccggc	1380	
aaacaaacca	ccgctggtag	cgggttttt	tttggtttgc	agcagcagat	tacgcgcaga	1440
aaaaaggat	ctcaagaaga	tcctttgatc	tttctacgg	ggtctgacgc	tcagtggAAC	1500
gaaaactcac	gttaagggat	tttggtcatg	agattatcaa	aaaggatctt	caccctagatc	1560
ctttaaatt	aaaaatgaag	ttttaaatca	atctaaagta	tatatgagta	aacttggtct	1620
gacagttacc	aatgcataat	cagtgaggca	cctatctcg	cgatctgtct	atttcgttca	1680
tccatagttg	cctgactccc	cgtcgtgtag	ataactacga	tacgggaggg	cttaccatct	1740
ggccccagtg	ctgcaatgat	accgcgagac	ccacgctcac	cggctccaga	tttatcagca	1800
ataaacccagc	cagccggaag	ggccgagcgc	agaagtggtc	ctgcaacttt	atccgcctcc	1860
atccagtcta	ttaattgttg	ccgggaagct	agagtaagta	gttcgcccagt	taatagttt	1920
cgcaacgttg	ttgccattgc	tacaggcatc	gtgggtcac	gctcgtcg	ttgtatggct	1980
tcattcagct	ccggttccca	acgatcaagg	cgagttacat	gatccccat	gttgtgcaaa	2040
aaagcggtta	gctccttcgg	tcctccgatc	gttgcagaa	gtaagttggc	cgcagtgtta	2100
tcactcatgg	ttatggcagc	actgcataat	tctcttactg	tcatgccatc	cgtaagatgc	2160
ttttctgtga	ctggtgagta	ctcaaccaag	tcattctgag	aatagtgtat	gcggcgaccg	2220
agttgctctt	gcccggcgtc	aatacggat	aataccgcgc	cacatagcag	aactttaaaa	2280
gtgctcatca	ttggaaaacg	ttcttcgggg	cgaaaactct	caaggatctt	accgctgttg	2340
agatccagtt	cgatgtAAC	cactcgtgca	cccaactgat	cttcagcatc	ttttactttc	2400
accagcgttt	ctgggtgagc	aaaaacagga	aggcaaaatg	ccgaaaaaaaa	gggataaagg	2460
gcgcacacgga	aatgtgaat	actcataactc	ttcccttttc	aatattattg	aagcatttat	2520
cagggttatt	gtctcatgag	cggatacata	tttgaatgta	tttagaaaaa	taaacaata	2580
ggggttccgc	gcacatttcc	ccgaaaagtg	ccacctgacg	tctaagaaac	cattattatc	2640
atgacattaa	cctataaaaa	taggcgtatc	acgaggccct	ttcgtc		2686

<210> 6  
<211> 17  
<212> DNA  
<213> Artificial sequence

<220>  
<223> Synthetic primer

<400> 6  
actggccgtc gttttac

17

<210> 7  
<211> 16  
<212> DNA  
<213> Artificial sequence

<220>  
<223> Synthetic primer

<400> 7  
aacagctatg accatg

16

<210> 8  
<211> 24  
<212> DNA  
<213> Artificial sequence

<220>  
<223> Synthetic primer

<400> 8  
cgccagggtt ttcccagtca cgac

24

<210> 9  
<211> 24  
<212> DNA  
<213> Artificial sequence

<220>  
<223> Synthetic primer

<400> 9  
agcggataac aatttcacac agga

24

<210> 10  
<211> 16  
<212> DNA  
<213> Artificial sequence

<220>  
<223> Synthetic primer

<400> 10  
gtaaaaacgac ggccag

16

<210> 11  
<211> 19  
<212> DNA  
<213> Artificial sequence

<220>  
<223> Synthetic primer

<400> 11  
atcgcggtt gcgtattgg

19